New Ideas in Test Design for Students Who Persistently Fail

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This session will…….

- Update on two research projects to better understand how to make the MontCAS CRT more accessible and appropriate for students with disabilities who struggle to meet grade level expectations.
- Discuss the innovative strategies used to investigate two new assessment approaches and the questions the projects are designed to answer.

Two approaches

- Montana General Supervision Enhancement Grant – MT GSEG
- Montana Enhanced Assessment Grant with Maine, New Hampshire, Rhode Island, Vermont – MT EAG (ART 2%)

Project similarities

- Both based on 2% assessment option (alternate assessment based on modified achievement standards – AA-MAS)
- Use same criteria for students to be eligible
- Follow same guidelines for test development

Five assessment options for students with disabilities

Achievement standards	Assessment type	Standards	Content of test is based on:	Cap for counting scores as proficient
Grade level *(required by IDEA 1997, 2004 & NCLB)*	Regular grade level assessment *(required by IDEA 1997, 2004 & NCLB)*	State content standards	Grade level content standards	No cap
Grade level *(required by IDEA 1997, 2004 & NCLB)*	Regular grade level assessment with accommodations *(required by IDEA 1997, 2004 & NCLB)*	State content standards	Grade level content standards	No cap
Grade level *(required by IDEA 2004)*	Alternate assessment: different format but comparable to regular assessment. *(required by IDEA 2004)*	State content standards	Grade level content standards	No cap
Modified *(option offered NCLB regs, July 2007)*	Alternate assessment: a variety of formats are permitted *(optional)*	State content standards	Grade level content standards, with reduction in difficulty. Off-grade level tests are prohibited.	2% of total population (only for SWD who will not achieve grade level proficiency within the school year, may include any of the 13 disability categories)
Alternate: may be defined for grade levels or grade spans. *(option offered by NCLB regs, Dec, 2003)*	Alternate assessment: a variety of formats are permitted. *(required by IDEA 1997, 2004)*	State content standards	Grade level content standards, but may cover a narrower range of depth of content and/or reflects a reduced level of complexity. Test materials show a clear link to content standards for the grade level tested, but may be modified to reflect prerequisite skills.	1% of total population (only for students with significant cognitive disabilities, but not disability category-specific)

Current national research on 2% AA-MAS…

…is trying to find out:

- Who are the students?
- What adaptations will improve a test for them?
- How will we know it is working?

Which students are eligible?

- Students with disabilities (any of the 13 categories, but most likely will include mild mental retardation, learning disability, emotional disability, and autism)
- Will not achieve grade level proficiency this year due to their disabilities
- Students may be eligible in one or more subjects for which assessments are administered

Which students are eligible?

- Students who need less difficult test items, covering the same breadth of content as the CRT, and
- Neither the current CRT nor the CRT-Alt assessment options provide an accurate assessment of what these students know and can do.
  - The grade-level CRT is too difficult
  - The CRT-Alt is too easy (but some students now taking the CRT-Alt may qualify)

Students must have standards based IEPs

- IEP goals are based on grade level academic content standards
- IEP is designed to monitor a student's progress in achieving the student's standards-based goals
- IEP must ensure access to the grade-level curriculum, including instruction

Who decides?

The IEP team decides annually.

They need multiple valid measures for evidence to show student qualifies.

State Policies on AA-MAS

- Ensure that a student is not precluded from attempting to complete the requirements for a regular high school diploma.
- Explain any effects of State and local policies on the student's education resulting from taking an AA-MAS.
- Ensure that parents of students are informed that their child's achievement will be measured based on modified achievement standards.
- Ensure that each IEP team reviews annually for each subject - to ensure that modified standards remain appropriate.

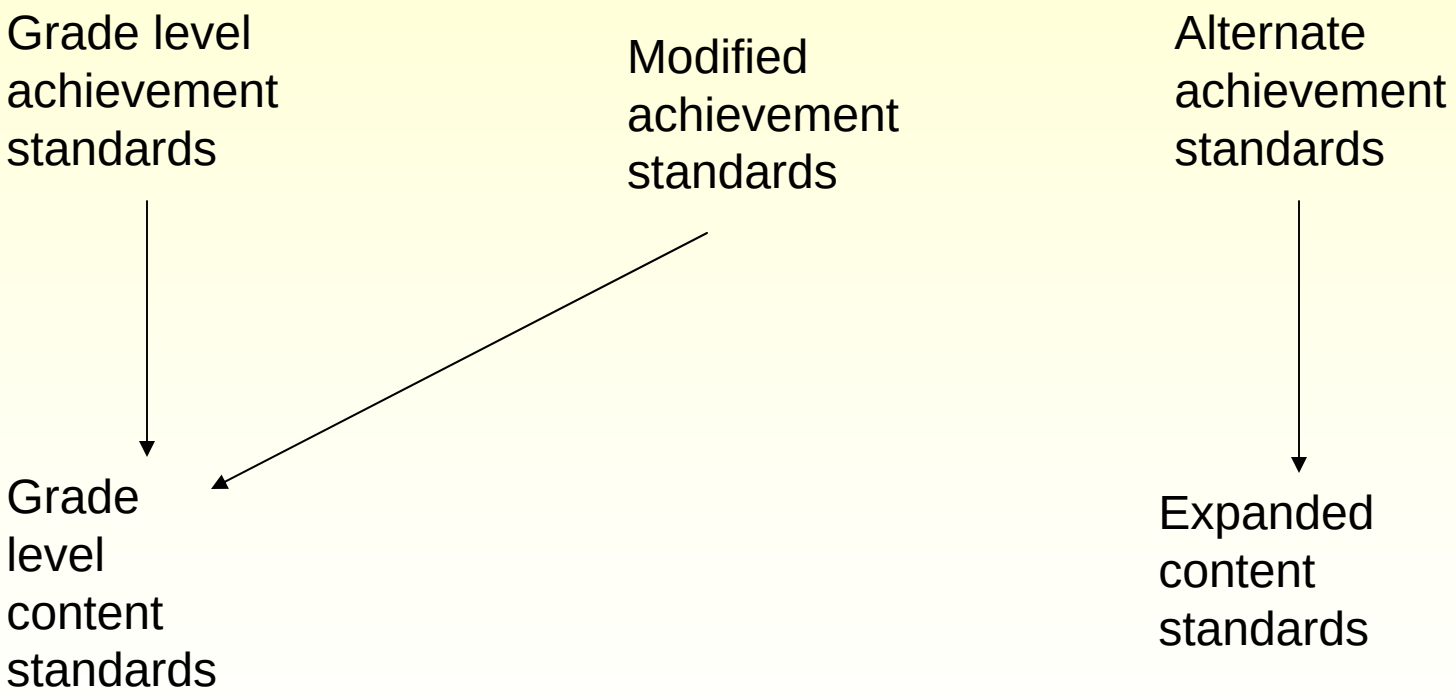
Guidelines for test development

- May modify the general test or develop a new one.
- Must cover the same grade-level content as the general assessment.
- The expectations of content mastery are modified, not the grade-level content standards themselves.
- Use universal design principles.

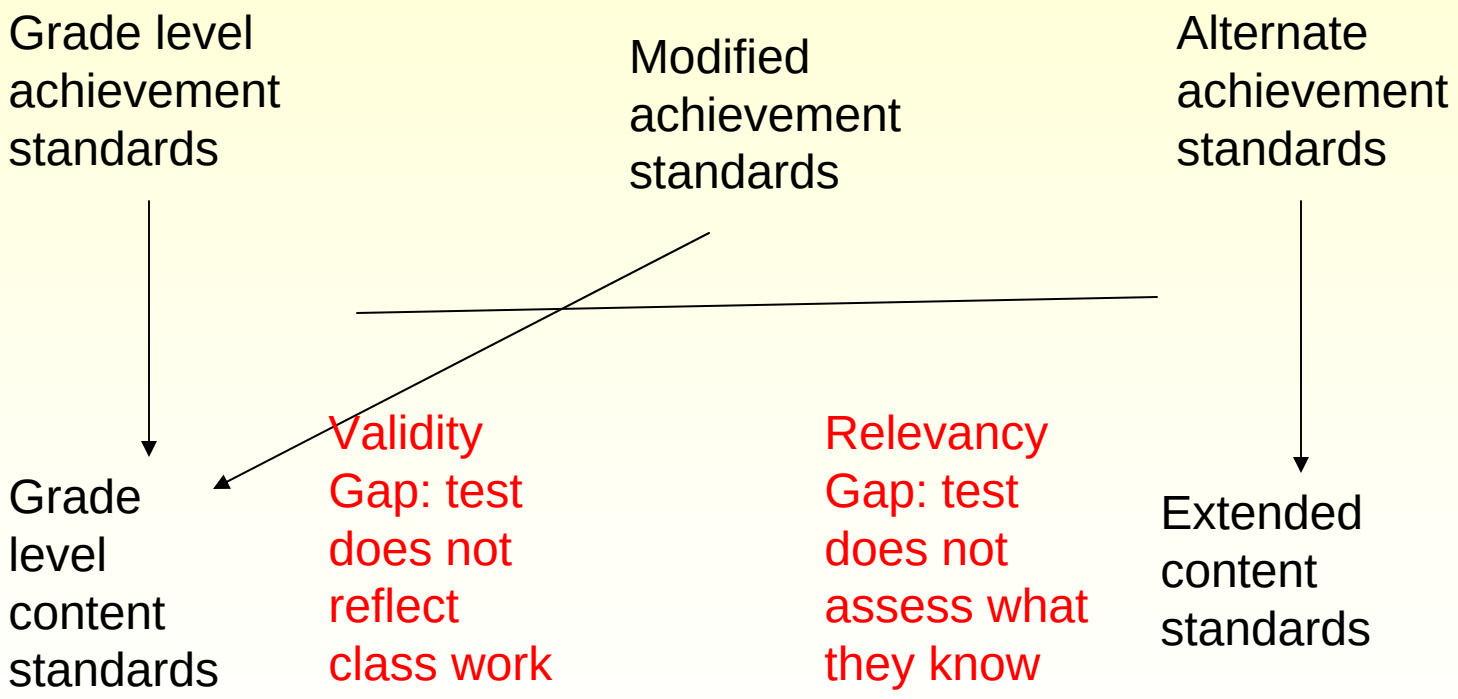
Guidelines for test development

- Must be aligned with State content standards in the same manner as the general assessment
- Can be less difficult than the general test, lower level of complexity
- Must cover the same breadth, same test blueprint as general test, but can have fewer items
- Must identify the accommodations for each assessment that do not invalidate the test score.

Modified Achievement Standards provide another option while maintaining high expectations



There are two gaps in many assessment systems *(NEC EAG, 2007)*



Bechard & Godin, 2007. NEC EAG

So…what do we need to know about these students??

- What are the learning/test taking characteristics of the eligible students? How are they different than other students?
- What approaches to the test will have the greatest positive impact in providing better information on what they know and can do?
- How would they respond to different test formats (e.g., a computer-based test with prompts, audio support)?

Project differences

- Purpose
- Grade level/content focus
- Research questions
- Intended outcomes

ART 2%

ADAPTING READING TESTS

Adapting Test Items to Increase Validity of Alternate Assessments Based on Modified Achievement Standards (ARTIIV)=ART2%

Montana, Maine, New Hampshire, Rhode Island, Vermont

Measured Progress, EDC, Arizona State University

Purpose of ART 2%

To explore changes to item content, test format, and read-aloud administration that will provide a better test for students with disabilities

Brief Overview of ART 2%

- 1 ½ years: October 2007 – March 2010
- Grade/Content: High school reading comprehension
- Target research population: students with disabilities in 5 states who meet criteria.

Project Goals

Identify appropriate and effective manipulations of current tests

- Test content: priority/common content and available released item pool (87 items, 14 passages) from MT, ME, NECAP
- Three investigative methodologies:
  - Analysis of performance data
  - Cognitive modeling of skill set
  - Cognitive interviews

Item manipulations tested

1. Linguistic manipulations of item language
2. Format manipulations of text
3. Combination of linguistic and format manipulations
4. Oral administration of original items

Research Questions

- What impact on item difficulty, if any, does reducing the cognitive load due to **formatting** have compared to item difficulty in the original construction?
- What impact on item difficulty, if any, does reducing the cognitive load due to **LSA** have compared to item difficulty in the original construction?
- What impact on item difficulty, if any, does reducing the cognitive load due to **formatting & LSA** have compared to item difficulty in the original construction?
- What impact on item difficulty, if any, does a **read-aloud** modification with items in their original form have compared to the items in written form?

High School Reading Pilot Test

~2000 students in 5 states (January 2009)

- Four passages (2 long, 2 short), with 34 related items selected.
- Manipulations applied.
- Items reviewed and revised
- Tests developed and distributed.
- Randomized distribution of five versions (4 "adjusted" versions + original version) organized with four variations of passage order = 20 forms

Future Project Goals

- Determine feasibility of incorporating these strategies into states' assessment systems. (Spring, 2009)
- Disseminate project results.
  - AERA (April, 2009)
  - Two white papers in progress (cognitive interviews and 2% test development)

MONTANA

GENERAL SUPERVISION ENHANCEMENT GRANT

Identifying Students in Need of Modified Achievement Standards and Developing Valid Assessments

Montana Office of Public Instruction
Denise Juneau, Superintendent

Purpose of the MT GSEG

The Montana General Supervision Enhancement Grant is looking at the effects of providing scaffolding through interactive format and content hints for middle school reading and mathematics assessments.

Montana Office of Public Instruction
Denise Juneau, Superintendent

Brief Overview of Montana GSEG, 2007-2010

Focus on grade 8 reading and grades 7 and 8 mathematics to:

- Identify students in need of modified achievement standards (MAS).
- Determine what content knowledge the student is lacking to achieve proficiency
- Develop dynamic online assessment that provides scaffolding after an incorrect response.
- Provide OPI with information on next steps

Project Goals

1. Identify students in need of modified achievement standards (MAS).
2. Determine test adaptations needed to measure MAS.
3. Specify inferences about target students' KSAs based on the alternate assessment-MAS
4. Determine operational plan for collecting validity evidence.

Project Research Questions

- Have students in need of MAS been effectively identified?
- Are eligibility guidelines sufficient for IEP teams to appropriately select students in need of MAS?
- Do MAS reflect high but achievable expectations for identified students?
- Is the proposed approach technically sound?
- What are the advantages and disadvantages of the adding the proposed approach to the existing assessment system?
- For which students is the CRT-Modified a better match than the CRT with accommodations?

What have we done so far?

- Review eligibility guidelines and descriptions of students
- Analyze standards-based IEPs from students in Montana
- Conduct literature review
- Analyze CRT test performance, including distractor analyses and cognitive load analyses
- Gather expert teachers' recommendations for test development
- Conduct cognitive interviews with students

What have we learned about the students?

- Short-term or working memory capacities are limited
- Classroom achievement and performance is significantly below grade-level peers
- Curriculum is individualized and instruction specially designed
- Needs to have information organized specifically, in smaller "chunks," with concrete learning aids, such as graphic organizers, manipulatives, and prompts or scaffolding
- Requires instruction in pre-requisite skills to the grade level indicators being assessed
- Needs to have complex constructs broken down into basic main ideas or smaller steps
- Poor reading skills that hinder progress in acquiring academic content, requiring less dense text and vocabulary simplification

What will the test look like?

- CRT test content from item pool (passages and items) will be used.
- All students will take the same items in the same sequence.
- The computer-based format will allow for administration of a hint/prompt when a wrong answer is selected.

Examples of interactive format

- Reading recall question: student is shown chunk of text were answer is found
  - Reduces the demand on working memory.
- Mathematics word problem: student is provided with a visualization of the problem
  - Decrease text required, while maintaining real-world context.
  - Visuals present the problem through another format that provides helpful redundancy
  - Visuals remove the construct-irrelevant variable caused by language in mathematics problems.

Examples of content prompts

- Reading complex language: break down the content into parts
  - Reduce language density and clarify
- Mathematics symbols: name the process or the symbol
  - Activate prior knowledge

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